

Central Valley Flood Protection Plan

HANDOUT 4

Round 2 Management Actions Workshop – RURAL/AGRICULTURAL AREAS DRAFT WORKSHOP WORKSHEET

Management Action Category/ ➤ Subcategory	Compatibilities with Rural/Agricultural Areas	Conditions that Support Implementation	Implementation Challenges	Ways to Alleviate Implementation Challenges
Additional Floodplain & Reservoir Storage ➤ <i>Floodplain Storage (transitory storage)</i>	<ul style="list-style-type: none"> • Could increase level of protection from flood for adjacent rural/ agricultural areas • Increased flood protection can help preserve certain types of agricultural land uses and productivity • Increased flood protection can help provide increased security and stability which can help improve social, political, financial well being of a rural/agricultural setting • Could augment local water supplies (through groundwater recharge) • ... 	<ul style="list-style-type: none"> • Large areas connected to historical floodways w/o rural/agricultural development • Minimal infrastructure and urban development • ... 	<ul style="list-style-type: none"> • Can disrupt agricultural practices, especially for permanent crops • If lands taken out of production, loss of tax base and potential impact on regional agricultural viability • If remains in production, debris and sediment removal, restoration of agricultural infrastructure, and other clean-up potentially required • Potential impacts to adjacent rural/agricultural lands and uses and potential for future agricultural development • ... 	<ul style="list-style-type: none"> • Flood easements to compensate for changes in agricultural production, crop types, etc. • Incorporate/integrate recreation or other rural/agricultural benefits • Planting of crops suitable for temporary flooding, such as alfalfa, wheat, and grapes • Post-flood recovery programs to assist in clean-up. • Safe harbor agreements • Fair, equitable, and affordable funding mechanisms for rural areas • Revise current vegetation management policy to coincide with current regulatory requirements • ...

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Additional Floodplain & Reservoir Storage ➤ <i>Reservoir Storage</i>	<ul style="list-style-type: none"> • Could increase level of protection from flood for adjacent rural/ agricultural areas • Increased flood protection can help preserve certain types of agricultural land uses and productivity • Increased flood protection provides increased security and stability which can help improve social, political, financial well being of a rural/agricultural setting • ... 	<ul style="list-style-type: none"> • Areas with minimal community development • ... 	<ul style="list-style-type: none"> • Limited financial resources within rural/agricultural communities • Can impact downstream channel conditions, such as aggradations due to reduced channel flows • ... 	<ul style="list-style-type: none"> • Systemwide coordinated operations achieved thru Flood operations agreements • Greater financial incentives are available for multi-benefit projects • Fair, equitable, and affordable funding mechanisms for rural areas • ...

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Storage Operations ➤ Objective releases ➤ Flood storage allocation	<ul style="list-style-type: none"> • Could increase level of protection from flood to rural/ agricultural areas • Increased flood protection can help preserve certain types of agricultural land uses and productivity • Increased flood protection provides increased security and stability which can help improve social, political, financial well being of a rural/agricultural setting • ... 	<ul style="list-style-type: none"> • Requires suitable downstream channel conditions • ... 	<ul style="list-style-type: none"> • Changes to objective releases could impact downstream channel conditions, such as aggradations due to reduced channel flows, which could add unintended risk to small communities adjacent to these downstream channels • Institutional structures and water control manuals currently in place are insufficient to support coordinated operations between upstream reservoirs and downstream systems which could result in unintended impacts to small communities • ... 	<ul style="list-style-type: none"> • Combine release changes w/downstream channel improvements as appropriate • Combine storage operations w/updates to water control manuals to include systemwide operations criteria as appropriate • Combine storage operations with new policies that address coordinate operations among local, state, and federal institutions • ...

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Flood Protection System Modification ➤ Bypasses (Expand/New) ➤ Setback Levees ➤ Levees ➤ Ring Levees	<ul style="list-style-type: none"> Each type of system modification would provide increased level of protection to rural/agricultural areas Increased flood protection provides increased security and stability which can help improve social, political, financial well being of a rural/agricultural setting Setback levees can reduce long-term O&M associated with erosion and other river processes New or improved levees that do not expand existing footprint preserves all agricultural production and related practices Strengthening levees reduces the risk of levee failure; reduces O&M costs ... 	<ul style="list-style-type: none"> For bypasses and setback levees, need areas connected to historic floodways For bypasses and setback levees, need minimal infrastructure and urban development Each type of system modifications requires suitable geotechnical conditions Each type of system modifications requires suitable topographic conditions ... 	<ul style="list-style-type: none"> Floodways and bypasses graded and developed for agricultural production can reduce flood carrying capacities Costs may be high for a small community to bear, such as O&M costs to maintain ring levee long-term Potential impacts to community land uses as a result of levee footprint Potential impacts to transportation corridors or utility infrastructure into/out of the rural/agricultural areas New/expanded bypasses may depend on landowner willingness ... 	<ul style="list-style-type: none"> Leverage funding from multiple projects to receive flood benefits as part of larger, regional projects Greater financial incentives are available for multi-benefit projects Fair, equitable, and affordable funding mechanisms for rural areas Easements to compensate for changes in land uses ...

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Floodplain Management ➤ Acquisitions and buyouts;	<ul style="list-style-type: none"> Overall improved protection of lives and property over the long term ... 	<ul style="list-style-type: none"> Minimal agricultural, infrastructure, and urban development ... 	<ul style="list-style-type: none"> Costs may be high; potential reduction in tax revenue Local zoning regulations Private property rights, and water rights ... 	<ul style="list-style-type: none"> Goes along with Policy and Regulations MAs that encourage compatible land uses with floodplain function ...

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Floodplain Management ➤ Floodproofing (wet floodproofing and dry floodproofing)	<ul style="list-style-type: none"> • Could provide overall improved protection of lives and property over the long term • ... 	<ul style="list-style-type: none"> • Minimal agricultural, infrastructure, and urban development • Relatively shallow flood depths; slow rate of rise of flood water; low velocity flood waters • Wet floodproofing can be appropriate for certain types of agricultural structures located in wide, expansive floodplains • Infrastructure types that can be protected using dry floodproofing measures • ... 	<ul style="list-style-type: none"> • Lack of funding • Local zoning regulations • Private property rights, and water rights • Building standards adoption and enforcement can be challenging in rural areas due to resources limitations • ... 	<ul style="list-style-type: none"> • Goes along with Policy and Regulations MAs that encourage compatible land uses with floodplain function • ...



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Floodplain Management ➤ Risk awareness/ mapping ➤ Insurance	<i>Management actions in this subcategory are community-independent</i>			

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Disaster Preparedness and Flood Warning	<ul style="list-style-type: none"> • Improve speed and effectiveness of response to flood • Clear identification of flood fighting, emergency response and recovery role • Could provide overall improved protection of lives and property over the long term • ... 	<ul style="list-style-type: none"> • Levees clear of obstacles (i.e., unmaintained/unpermitted encroachments, large woody vegetation, etc.) that otherwise could impair flood fighting activities • Availability and accessibility of flood fighting materials, especially for communities that lack easy access to these materials • ... 	<ul style="list-style-type: none"> • Local flood contingency planning and regional response planning challenges (access, egress, warning, and communications) • Confusion regarding flood fight roles and responsibilities • Limited funding, institutional capacity, resources, and coordination • ... • Long-term storage and upkeep costs for materials • Lack of comprehensive mutual aid agreements covering flood response • ... 	<ul style="list-style-type: none"> • Purchase and position flood fighting materials in preparation for a flood event is especially important for rural communities whose LMAs may have the most difficulty procuring supplies under current conditions • Fair, equitable, and affordable funding mechanisms for rural areas • ...

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Flood Fighting, Emergency Response & Flood Recovery	<ul style="list-style-type: none"> Improve speed and effectiveness of response to flood Clear identification of rural/agricultural flood fighting, emergency response and recovery role Could provide overall improved protection of lives and property over the long term Improved post-flood recovery plans and programs provides increased security and stability which can help sustain rural communities economic growth and stability ... 	<ul style="list-style-type: none"> Levees clear of obstacles (i.e., unmaintained/unpermitted encroachments, large woody vegetation, etc.) that otherwise could impair flood fighting activities Availability and accessibility of flood fighting materials, especially for communities that lack easy access to these materials ... 	<ul style="list-style-type: none"> Agricultural lands and rangelands are often considered a lower priority during a flood emergency and are frequently omitted from post-flood recovery operations due to lower flood risk compared to other land uses Limited funding, Institutional capacity, resources, and coordination Local flood contingency planning and regional response planning challenges (access, egress, warning, and communications) Critical infrastructure located within the floodplain ... 	<ul style="list-style-type: none"> Provide adequate funding and identify appropriate means for reimbursement Address policies and procedures that govern roles/responsibilities at Federal, State, local level Combine with land use policy MAs that encourage compatible land uses with floodplain Fair, equitable, and affordable funding mechanisms for rural areas ...

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Ecosystem Restoration	<ul style="list-style-type: none"> Wetland creation in rural areas may be more accepted with cooperative efforts to use coalition building techniques to enhance and restore a broad landownership base Agricultural lands provide protection for habitat areas, ... 	<ul style="list-style-type: none"> ... 	<ul style="list-style-type: none"> Managing agricultural lands for wildlife benefits can be difficult while maintaining a profitable agribusiness Floodplain restoration is likely to occur in rural areas which will require stakeholder participation and buy-in from ranchers and farmers, which may be difficult ... 	<ul style="list-style-type: none"> Develop guidelines that balance habitat and ecosystem goals with that of agricultural preservation Develop land, levee, and channel management plans for ecosystem enhancement areas ...

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Finance & Revenue	<ul style="list-style-type: none"> ... 	<ul style="list-style-type: none"> ... 	<ul style="list-style-type: none"> Smaller tax revenues limit funding for maintenance and repair activities Many rural and agricultural areas have historically experienced difficulty securing federal funding because the value of local infrastructure and rural land uses do not outweigh the increasing cost of implementing flood-damage-reduction projects Eliminating subsidies for structures that are repetitively damaged would be more difficult to implement in smaller communities with less resources ... 	<ul style="list-style-type: none"> Compensating rural areas for accepting lesser flood protection than urban areas Benefit-cost ratios and other methods used by the USACE and other agencies to evaluate and establish the value of agricultural areas should be updated to capture the multipurpose benefits of agriculture ...

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Policy & Regulations	<ul style="list-style-type: none"> • More opportunity for compatible land use management in rural settings where land use not yet developed • ... 	<ul style="list-style-type: none"> • ... 	<ul style="list-style-type: none"> • Current flood zones designations don't reflect unique circumstances and characteristics of rural/agricultural areas • 	<ul style="list-style-type: none"> • Develop state program to share insurance costs, develop flood resilience measures, and comply with future building regulations for agricultural areas •



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<p>Operations & Maintenance</p> <ul style="list-style-type: none"> ➤ Vegetation Mgmt ➤ Dredging & Clearing ➤ Administration of Encroachment s/penetrations ➤ Inspections, etc 	<ul style="list-style-type: none"> • State and federal levees are often maintained by levee or reclamation districts in agricultural areas • . . . 	<ul style="list-style-type: none"> • . . . 	<ul style="list-style-type: none"> • It is difficult to adequately maintain levees and channels in agricultural and rural areas in keeping with the authorized operation and maintenance manuals due to permitting and mitigation requirements and/or restrictions • Funding sources for maintaining levees and channels are unstable, • 	<ul style="list-style-type: none"> • Apply permit and approval processes appropriate for each project, with consideration for the entire flood system • Programmatic environmental permits should be developed • Fair, equitable, and affordable funding mechanisms for rural areas • Explore mitigation banking opportunities in response to flood maintenance activities and needs • Identify opportunities for the beneficial reuse of sediment •



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Permitting	<i>Management actions in this category are community-independent</i>			



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